SHARP®

OPERATION MANUAL
BEDIENUNGSANLEITUNG

PC LINK SYSTEM
FOR EL-9400/9450
9600/9600c/9650
PC-LINK-SYSTEM
FÜR EL-9400/9450
9600/9600c/9650

For WINDOWS
Für WINDOWS

ENGLISH ..... Page 1
DEUTSCH ..... Seite 23

CE-LK1P

ENGLISH

PC LINK SYSTEM FOR EL-9400/9450/9600/9600c/9650 OPERATION MANUAL

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< INTRODUCTION >

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Note

- Some of the models described in this manual may not be available in some countries.
- "EL-94xx" refers to EL-9400/9450, and "EL-96xx" represents EL-9600/9600c/9650.

CONTENTS

♦ GETTING STARTED 4
- What is PC LINK? 4
- Checking the Accessories 5
- System Requirements 5
- Setting Up PC LINK 6
- Connecting the EL-94xx/96xx to the PC 7

♦ USING PC LINK 8
- Files PC LINK can Handle 8
- Starting and Exiting PC LINK 9
- Specifying Model Type 10
- Creating and Saving a New Program 10
- Sending, Receiving, and Backup Programs and Various Data 11
- Opening a Saved File 13
- Using Edit Functions 14
- Saving and Printing the Contents of the Edit Screen 17
- Screen Capture 18
- Group/Ungroup 19
- Converting a File 20

♦ APPENDIX 21
- Table for Converting Special Symbols into TXT Letters 21
- How to Proceed in the Event of Abnormal Conditions 22

GETTING STARTED

What is PC LINK?

- Creates and edits EL-94xx/96xx programs on a PC.
- Receives and saves programs and various data from EL-94xx/96xx
- Makes a backup of all the contents of memory of EL-94xx/96xx.
- Sends programs and various data to EL-94xx/96xx.
- Loads image data of EL-94xx/96xx.
- Converts programs and various data files into a Text File.
  Converts program text files into a Program File.
- Prints out programs and various data files.

This manual is intended for users who already understand how to use the EL-94xx/96xx and how to operate a PC.
Also refer to the PC manual with this book.

Checking the Accessories

Please check that all the following accessories are included upon purchase.

- 3.5” (90 mm) floppy disk
  For IBM PC compatible computer 1
- PC LINK adaptor 1
- Converting connector for connecting the PC
  For IBM PC compatible computer 1
- Communication cable CE-450L 1
- Operation manual (this book) 1

System Requirements

- 100% IBM Compatible PC
- Microsoft® Windows® 98/98 Second Edition/2000 Professional/Me/XP
- Pentium® 150MHz or higher for Microsoft® Windows® 98/98 Second Edition
  Pentium® 200MHz or higher for Microsoft® Windows® 2000 Professional/Me
  Pentium®/Celeron® Family 300MHz or higher for Microsoft® Windows® XP
- 30MB Available Hard Disk Space
- 64MB RAM for Microsoft® Windows® 98/98 Second Edition/2000 Professional/Me
  128MB RAM for Microsoft® Windows® XP
- At least one 3.5” diskette drive
- 1 Available Serial Port
- Mouse or Compatible Pointing Device

Setting UP PC LINK

1 Installing the PC LINK Software

1. Start Windows.
2. Insert the attached floppy disk in the floppy disk drive.
3. Click the **Start** button, and then select **Run**.
4. Enter “Setup” followed by the path name of the location where the setup program is saved.
   For example, type **“a:\setup”**.
5. Click on the **OK** button.
   The Setup screen appears, then follow the screen instructions for setup.

After completing the setup, the **SHARP-PC LINK for EL-94xx_96xx** folder is added in the **Program** folder of the Start menu.

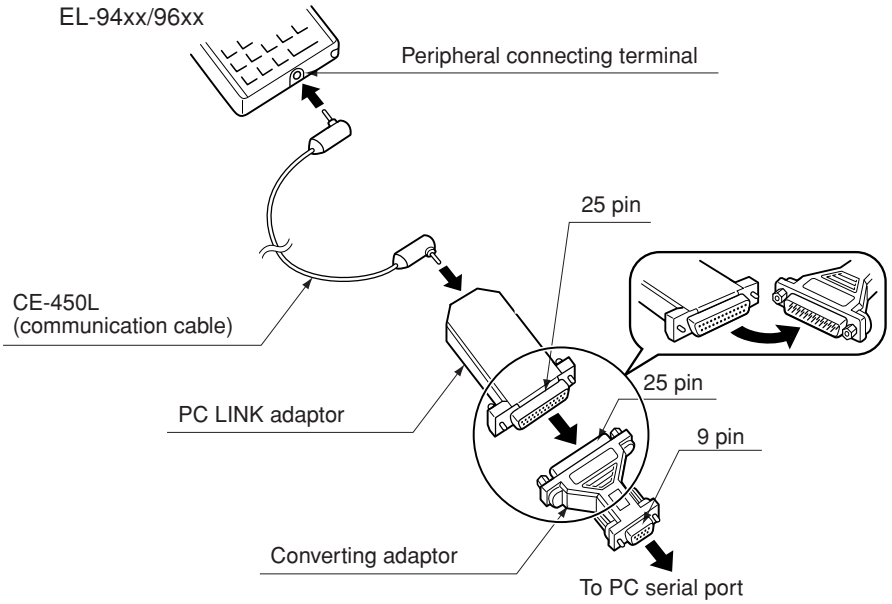
Connecting the EL-94xx/96xx to the PC

Connect the EL-94xx/96xx to the PC with the attached PC LINK adaptor.

NOTE: Push in all connectors firmly and make sure they cannot be removed by pulling them lightly.
Also tighten the fixing screws.

1. Turn off the EL-94xx/96xx and the PC.
2. Connect one side of CE-450L to the peripheral connecting terminal (communication port) on the bottom of the EL-94xx/96xx; the other side to PC LINK adaptor.
3. The serial port shape of your PC determines connecting procedures as follows:

Shape of PC serial port	Connecting procedure
25 pin (male)	Connect the other side (25-pin side) of PC LINK adaptor to the serial port for the PC.
9 pin (male)	Connect the other side (25-pin side) of PC LINK adaptor to the 25-pin terminal of a converting adaptor. Also connect the other side (9-pin side) of the converting adaptor to the serial port for the PC.



* The illustration shows connecting procedure for PC serial port shape of 9 pin (male).

Files PC LINK can Handle

PC LINK can handle the following files listed below.

Contents of File	File Name on PC	Extension		
		EL-9400	EL-96xx	EL-9450
Backup	backup	g3b	g2b	g5b
Group	Set arbitrarily. (Initial value: Group)	g3g	g2g	g5g
Graph Database (GDB)	g_data1 to g_data9, g_data0	g3d	g2d	g5d
Graph Equation	y1 to y9, y0 / x1t to x6t / y1t to y6t / r1 to r6 / u / v / w ← for EL-96xx only	g3y	g2y	g5y
Solver Equation	Match it with the file name on the calculator.	-	g2e	-
Picture	pict1 to pict9, pict0	g3i	g2i	g5i
List	l1 to l6	g3l	g2l	g5l
List Database (List DB)	l_data1 to l_data9, l_data0	g3n	g2n	g5n
Matrix	mat_a to mat_j	-	g2m	-
Program	Set arbitrarily.	g3p	g2p	g5p
Slide Show	Match it with the file name on the calculator.	-	g2s	g5s
Table Setup	tblsetup	g3t	g2t	g5t
Window Setup	winsetup	g3w	g2w	g5w
Data variable	variable	g3v	g2v	g5v
Zoom	zoom	g3z	g2z	g5z
Text	Set arbitrarily.	txt	←	←
Tagged Image Format	Set arbitrarily.	tif	←	←
Bitmap	Set arbitrarily.	bmp	←	←

Starting and Exiting PC LINK

1 Starting the PC LINK

Select **Start → Programs → SHARP PC-LINK for EL-94xx_96xx → SHARP CE-LK1P** to start the PC LINK.
After the Startup screen, the Start screen is displayed with the menu bar and icons.

2 Exiting the PC LINK

Select the **Exit** from the **File** menu, or double-click on the **CLOSE** box at the upper-most-left corner on the screen.

Note: If a communication will not be available, check the settings of the communication (COM) port and the cable connection. If these procedures will not solve the problem, set the Power Management and the screen saver to OFF.
(See Readme.txt for details.)

Specifying Model Type

Before using the PC LINK functions, specify the Model Type (EL-9400,EL-9450, EL-9600/9650) of your calculator.
Specifying the Model Type allows the file extension, the Key Board layout of the View menu, and the command listing of the Func Table menu to be set to the contents of your calculator.

1. Select the **Model Type** from the **Tools** menu.
   The Model Type listing is displayed.
2. Click on the same Model as your calculator.
   (While using EL-9600c, select "EL-9600/9650".)

Creating and Saving a New Program

1 Creating a New Program

NOTE: Only programs can be created.

1. Select the **New** from the **File** menu.
   The Newly-Edited screen is displayed.
2. Enter a program name in **Title**:
3. Enter a program.
   (For details on entering a program, refer to “Using Edit Functions” on page 14.)

2 Saving a Created Program

1. Select the **Save As...** from the **File** menu.
   The Save As screen is displayed.
2. Specify the drive and folder, and then enter the file name and extension.
   The extension is different depending on your calculator.
3. Click on the **OK** button.
   The created program is saved as a new program file with the contents specified in 2.

* Alphanumeric characters can be used for file names. If a program file stored with a file name that consists of non-alphanumeric characters is sent to the EL-94xx/96xx, the file name may change.

Sending, Receiving, and Backup Programs and Various Data

(1) Programs and various data can be received from the EL-94xx/96xx in order to save them in a file. The contents saved in the file can also be sent to the EL-94xx/96xx.
(2) Back up all data of the EL-94xx/96xx to the file. Also, restore the backup data to the EL-94xx/96xx.

1 Setting a Communication Port

Set a communication port.
Set the communication port where the adaptor for the PC is connected.

1. Select the **Communication Port** from the **Link** menu.
   A list of communication ports is displayed.
2. Click on the port to be used or **Auto Setting**.

2 Sending and Receiving Programs and Various Data

Programs and various data can be received from the EL-94xx/96xx and saved in a file. Also, the file can be sent to the EL-94xx/96xx.

(1) Receiving Programs and Various Data from the EL-94xx/96xx to be Saved in a File

1. Turn on the EL-94xx/96xx.
2. Select the **Receive...** from the **Link** menu.
   The Receive File screen is displayed.
3. Specify the kind of drive, folder, and file, then select the file to be received from the file list, and click on the **Select** button.
   The selected file is displayed on the File Selected column.
4. Click on the **OK** button.
   The Receiving screen is displayed on the PC screen to start receiving.
5. After the completion of receiving, the initial screen returns.

* If a file stored with a file name that consists of non-alphanumeric characters (Solver equation, Program, Slide show) is received by a PC, the file name may change.
* If multiple Solver equation and Program files are saved on the EL-94xx/96xx with the same file name, only the initial saved file can be received.
To receive all the files, save each file on the EL-94xx/96xx with a different file name.

(2) Sending a File to the EL-94xx/96xx

NOTE: Group files, Text files, TIFF files, and Bitmap files cannot be sent to the EL-94xx/96xx.

1. Turn on the EL-94xx/96xx.
2. Select the **Send...** from the **Link** menu.
   The Send File screen is displayed.
3. Specify the kind of drive, folder, and file, then select the file to be sent from the file list, and click on the **Select** button.
   The selected file is displayed on the File Selected column.
4. Click on the **OK** button.
   The Sending screen is displayed on the PC screen to start sending.
5. After the completion of sending, the initial screen returns.

3 Making a Backup

All data of the EL-94xx/96xx can be backed up to the disk, and the backed up data can be restored to the EL-94xx/96xx.

(1) Making a Backup of All Data

1. Turn on the EL-94xx/96xx.
2. Select the **Receive...** from the **Link** menu.
   The Receive File screen is displayed.
3. Specify the kind of drive, folder, then select “backup.g*b” from the file list, and click on the **Select** button.
   The selected “backup.g*b” is displayed on the File Selected column.
4. Click on the **OK** button.
   The receiving screen is displayed on the PC screen to start receiving, and then all data of the EL-94xx/96xx will be backed up.

(2) Sending Backup Data to the EL-94xx/96xx

NOTE: All the contents saved in the EL-94xx/96xx immediately before this are erased.

Perform the same procedure of “(2) Sending a file to the EL-94xx/96xx” on this page to send the back-up file (backup.g*b) to the EL-94xx/96xx.

Opening a Saved File

First, display (open) the contents of a file in order to print and edit the contents of the saved file.

1 Displaying the Contents of a File

NOTE: The contents of Backup files, Group files, GDB files, Graph equation files, Solver equation files, and TIFF files cannot be displayed.
(The files cannot be opened.)

1. Select the **Open...** from the **File** menu.
   The Open File screen is displayed.
2. Specify the kind of drive, folder, and file, then select the file whose contents are to be displayed from the file list.
3. Click on the **OK** button.
   The selected file is opened with its contents displayed.

2 Printing a File

NOTE: The contents of Backup files, Group files, GDB files, Graph equation files, Solver equation files, and TIFF files cannot be printed.

1. Display the contents of a file on the screen.
2. Select the **Print...** from the **File** menu.
   The Print Setting screen is displayed.
3. If necessary, specify items such as the range and the number of copies.
4. Click on the **OK** button.
   The Print Run screen is displayed, and then the contents displayed on the screen are printed.

Using Edit Functions

NOTE: The files that can be edited with the Edit functions are: List files, List DB files, Matrix files (for EL-96xx only), Program files, Table setup files, Window setup files, Data variable files and Zoom files.

The Edit functions are used for creating EL-94xx/96xx programs and editing the contents that have already been saved as files.

1 Entering Commands, Strings, and Values on the Edit Screen

On the Edit screen, the following three ways can be used to enter commands, strings, and values.

- Keyboard layout
- Func Table
- PC keyboard

(1) Entering from the Keyboard Layout

Display the Keyboard layout of the calculator on the Edit screen, and then enter necessary items such as commands.

1. Select the **Key Board** from the **View** menu.
   The Keyboard layout of the calculator is displayed.
2. Move the cursor to the key on the Keyboard layout you want to enter, and then click on it. The item is entered in the cursor position on the Edit screen.

* For some items such as “STAT PLOT”, “ZOOM”, and “CALC”, the subcategory and minor category are displayed. In this case, select the item in the left row (the subcategory) to display the right row (the minor category), and then move the cursor to the item in the right row that you want to enter, for double-click.

(2) Entering from the Func Table

The Func Table is used to select necessary items from the list containing items such as functions, and enter them.

1. Select the item from the major category of the **Func Table** menu.
   Selecting the Key Pad and Func All displays the subcategory.
   Selecting other than the Key Pad and Func All displays the subcategory and minor category, respectively.

2. Perform either of the following operations, and then enter an item in the cursor position on the Edit screen.
   When only the subcategory is displayed, move the cursor to the item that you want to enter, for double-click.
   When the subcategory and minor category are displayed, select the item in the left row (the subcategory) to display the right row (the minor category), and then move the cursor to the item in the right row that you want to enter, for double-click.

(3) Entering from the PC Keyboard

Enter necessary items such as functions from the PC keyboard.

2 Editing

(1) Cutting a string

1. Select the string to be cut.
2. Select the **Cut** from the **Edit** menu.
   The selected string is cut on the Edit screen and moved to the clipboard.

(2) Copying a string

1. Select the string to be copied.
2. Select the **Copy** from the **Edit** menu.
   The selected string is copied to the clipboard.

(3) Deleting a string

1. Select the string to be deleted.
2. Select the **Delete** from the **Edit** menu, or press the Delete on the PC keyboard.
   The selected string is deleted.

- Selecting **Select All** from the **Edit** menu selects all strings on the Edit screen.

(4) Pasting the contents of a clipboard to the Edit Screen

The contents moved to the clipboard by “Cutting a string” and “Copying a string” can be pasted at the cursor position on the Edit screen.

* Selecting the **Paste** from the **Edit** menu pastes the contents of the clipboard at the cursor position on the Edit screen.

(5) Finding a string

1. Select the **Find...** from the **Edit** menu.
   The Find screen is displayed.
2. Enter the string to be searched for.
   If necessary, specify the option to differentiate between uppercase and lowercase.
3. Click on the **Find Next** button.
   The cursor moves to the found string.

(6) Replacing a string

1. Select the **Replace...** from the **Edit** menu.
   The Replace screen is displayed.
2. Enter the string to be searched for, and then the string after replacement.
   If necessary, specify the option to differentiate between uppercase and lowercase.
3. Click on the **Find Next** button.
   The cursor moves to the found string.
4. Perform either of the following:
   Click the **Find Next** button to find the next string without replacing the string.
   Click the **Replace** button to find the next string after replacing the found string.
   Click the **Replace All** button to replace all found strings without checking.

* To return to the state immediately before making an operation (such as after making an input error), select the **Undo** from the **Edit** menu.

Saving and Printing the Contents of the Edit Screen

1 Overwriting

NOTE: Program files can be overwritten.

- After completing edition, select the **Save** from the **File** menu.
  The file is saved in the same file.

2 Save As

NOTES:
- List files, List DB files, Matrix files (for EL-96xx only), Table setup files, Window setup files, Data variable files, and Zoom files which are edited with the Edit functions, can be saved only as text files.
  When a file is saved as a text file, letters are included in @s for special symbols.
  (For details on special symbols, see the "Table for Converting Special Symbols into TXT Letters" on page 21.)
- Alphanumeric characters can be used for file names. If a program file stored with a file name that consists of non-alphanumeric characters is sent to the EL-94xx/96xx, the file name may change.

1. After completing editing, select the **Save As...** from the **File** menu.
   The Save As screen is displayed.
2. Specify the drive and folder, and then enter the file name and suitable extension.
3. Click on the **OK** button.
   The file is saved with the contents specified in step 2.

3 Printing

Perform the same procedure as in step 2 or from "2 Printing a File" on page 13, and then print the contents displayed on the screen.

Screen Capture

The screen capture function loads image data displayed on the EL-94xx/96xx on the PC.

1 Setting a Communication Port

Perform the same procedure as in step 1 or from “1 Setting a Communication Port” on page 11, and then set the communication port.

2 Loading Image Data

Load image data displayed on the EL-94xx/96xx.

1. Display the contents to be loaded on the EL-94xx/96xx display.
2. Select the **Screen Capture** from the **Link** menu.
   The Load screen is displayed to load image data.
3. After the completion of loading, the loaded image data is displayed with the Screen Image screen.

3 Saving and Printing Image Data

Image data can be saved in a file and printed by a printer connected to the PC.

(1) Saving

1. Load the image data.
2. Select the **Save As...** from the **File** menu.
   The Save As screen is displayed.
3. Specify the drive and folder, and then enter the file name and “tif” or “bmp” extension.
4. Click on the **OK** button.

(2) Printing

1. Open or load the image data.
2. If necessary, specify the Print image percentage for printing.
3. Select the **Print...** from the **File** menu.
   The Print Setting screen is displayed.
4. If necessary, specify items such as the range and the number of copies.
5. Click on the **OK** button.
   The Print Run screen is displayed, and then the contents displayed on the screen are printed.

Group/Ungroup

1 Group (Combine individual files into a group file)

It is possible to create a group file either by combining unrelated individual files or by combining only related files.

1. Select the **Group Files...** from the **Tools** menu. The file selection screen to choose which files to combine into a group file is displayed.
2. Specify drive, directory and the file type. Select the file to group from the file list and then click the **Select** button. The selected file is displayed in the File Selected column.
   Continue this file selection process for each file to group.
3. After selecting all the files for file grouping, click the **OK** button.
   The Save As screen is displayed.
4. Perform the same procedure as in step 2 or from “2 Save As” on page 17, and save as a group file.
   Note that the extension must be specified as “g3g” for the EL-9400 and as “g2g” for the EL-96xx and as “g5g” for the EL-9450.

2 Ungroup (Ungroup a group file)

1. Select the **Ungroup Files...** item from the **Tools** menu.
   The group file selection screen to choose which group file to ungroup is displayed.
2. Specify the kind of drive, folder, and file. Select a group file to ungroup from the file list and then click the **OK** button.
   The folder and drive selection screen to select where to save the individual files after ungrouping is displayed.
3. Specify the folder and drive and then click the **OK** button.
   The group file selected in step 2 is ungrouped and the individual files are saved as specified in step 3.

Converting a File

1 Converting a Program and Various Data Files into a Text File

NOTE: The following files can be converted to text files: List files, List DB files, Matrix files (for EL-96xx only), Program files, Table setup files, Window setup files, Data variable files, and Zoom files.
For conversion to a text file, letters are included in @s for special symbols.
(For details on special symbols, see the “Table for Converting Special Symbols into TXT Letters” on page 21.)

1. Open or display the contents of the file to be converted to a text file on the screen.
2. Perform the same procedure as in step 1 or from “2 Save As” on page 17; however, enter “txt” as the extension.

2 Converting a Program Text File into a Program File

Program text files can be converted into program files that can be sent to the EL-94xx/96xx.

1. Open or display the contents of the program text file to be converted into a program file.
2. Perform the same procedure as in step 1 or from “2 Save As” on page 17; however, as the extension, enter “g3p” for the EL-9400; “g2p” for the EL-96xx; “g5p” for the EL-9450.

APPENDIX

Table for Converting Special Symbols into TXT Letters

Upon conversion to TXT, the letter is included in @s. (@ ... @)

Letter	TXT conversion	Letter	TXT conversion
$_0$	0	≥	>=
$_1$	1	≤	<=
$_2$	2	×	x
$_3$	3	⌐	frac
$_4$	4	**P**	Per
$_5$	5	**C**	Com
$_6$	6	^{2}	^2
$_7$	7	$^{-1}$	^-1
$_8$	8	^{3}	^3
$_9$	9	⇒	sto
a	a	√‾	root
b	b	$_{10}$	10
c	c	Σ	SIGMA
d	d	∫	integral
e	e	**N**	N
r	r	σ	sigma
R	R	χ	chi
$_g$	grad	F	stat_F
n	n	□	box
$_E$	EE	+	cross
(-)	-	.	dot
°	deg	→	->
$_r$	rad	^{4}	^4
i	i	^{b}	^b
∠	complex_angle	⌴	unit
θ	theta	int ÷	intdiv
T	T		
π	pi		
$\hat{p}$	p_hat		
$\bar{x}$	x_mean		
$\bar{y}$	y_mean		
≠	not_=		

The letter in the part is bold.

How to Proceed in the Event of Abnormal Conditions

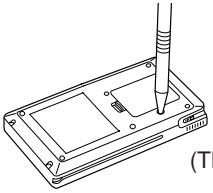
If this product is exposed to a powerful external electric field or shock during use, an abnormal condition may seldom occur in which all of the keys, including the [ON] key on the calculator connected, do not function. In the event of such a situation operate the machine from the start again, or reset the calculator by the following procedure before reoperation.

How to reset

Press the RESET switch on the back of the calculator only in the following cases.

- When an abnormal condition occurs and all the keys are inoperative.
- To clear all memory contents.

1) Press the RESET switch on the back of calculator.



(The figure shown is for EL-96xx.)

- Please use a ball-point pen when pressing the RESET switch. Do not use a sharp point or fragile object such as a needle, a mechanical pencil, etc.

2) The display should be as shown below. Press the RESET switch again if the display is different from what is shown below.

```
PRESS [CL] KEY TO
CLEAR ALL DATA

PRESS [ON] KEY TO
CANCEL
```

(The display shown is for EL-96xx.)

3) To keep the memory contents:
Press [ON]. The display will return to the initial display.

4) To clear all memory contents:
Press [CL] while the above is being displayed. All memory contents will be cleared and the display will become as follows.

```
ALL DATA CLEARED


PRESS ANY KEY
```

(The display shown is for EL-96xx.)
Pressing any key at this point restores the initial display.

In Europe:

This equipment complies with the requirements of Directive 89/336/EEC as amended by 93/68/EEC.

Dieses Gerät entspricht den Anforderungen der EG-Richtlinie 89/336/EWG mit Änderung 93/68/EWG.

Ce matériel répond aux exigences contenues dans la directive 89/336/CEE modifiée par la directive 93/68/CEE.

Dit apparaat voldoet aan de eisen van de richtlijn 89/336/EEG, gewijzigd door 93/68/EEG.

Dette udstyr overholder kravene i direktiv nr. 89/336/EEC med tillæg nr. 93/68/EEC.

Quest'apparecchio è conforme ai requisiti della direttiva 89/336/EEC come emendata dalla direttiva 93/68/EEC.

Η εγκατάσταση αυτή ανταποκρίνεται στις απαιτήσεις των οδηγιών της Ευρωπαϊκής Ενωσης 89/336/ΕΟΚ, όπως ο κανονισμός αυτός συμπληρώθηκε από την οδηγία 93/68/ΕΟΚ.

Este equipamento obedece às exigências da directiva 89/336/CEE na sua versão corrigida pela directiva 93/68/CEE.

Este aparato satisface las exigencias de la Directiva 89/336/CEE, modificada por medio de la 93/68/CEE.

Denna utrustning uppfyller kraven enligt riktlinjen 89/336/EEC så som kompletteras av 93/68/EEC.

Dette produktet oppfyller betingelsene i direktivet 89/336/EEC i endringen 93/68/EEC.

Tämä laite täyttää direktiivin 89/336/EEC vaatimukset, jota on muutettu direktiivillä 93/68/EEC.

SHARP CORPORATION

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